

"PRAIRIE SUNSET"

—From a Water-colour by Robert Hurley, Saskatoon.

Soil Survey and Soil Classification in Saskatchewan, a Few Snippets

Darwin Anderson

The Start of the Soil Survey

- A Royal Commission, appointed as a result of the Better Farming Conference in Swift Current in 1920, recommended that:
 - “ *a reconnaissance soil survey be undertaken to outline the various soil areas and classify them as to their suitability for grain growing and stock raising*”,
 - and
 - ‘ *the soil survey should be conducted with the University as the central point of activity...*’



The First Few Years



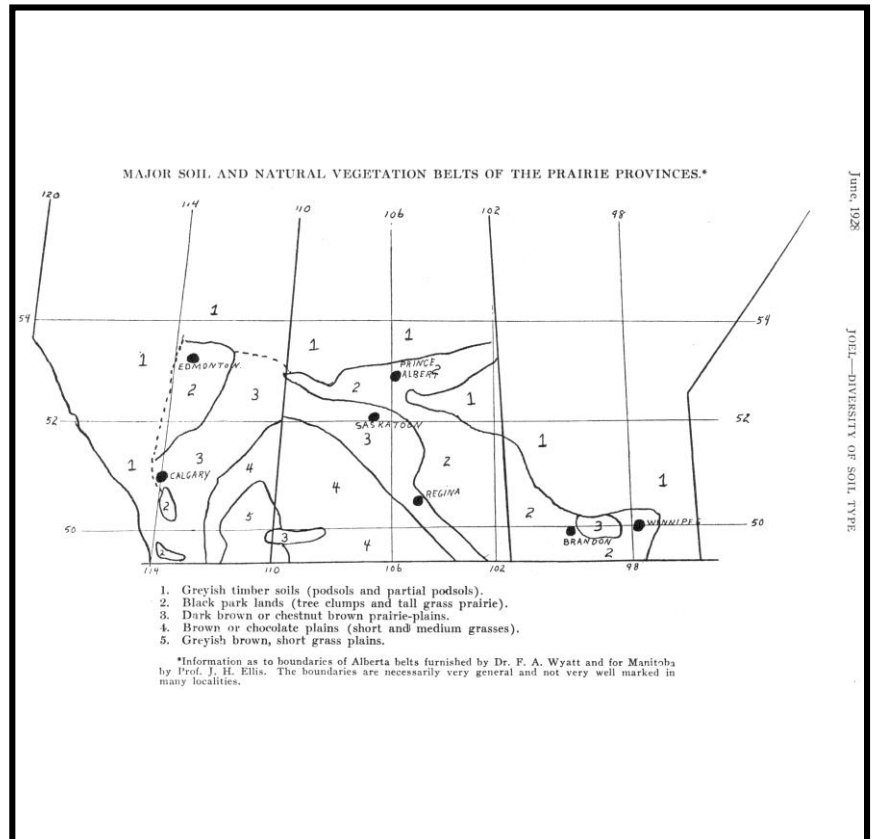
- Arthur H. Joel, Head of Soils from 1924 until 1934 initiated the soil survey.
- Work began in the SW Saskatchewan, the area most strongly affected by soil degradation.
- H.C. Moss described Joel as an excellent field pedologist and mentor.
- Joel made his emerging knowledge of prairie soils known to international scientists.

World Soils Congress 1927

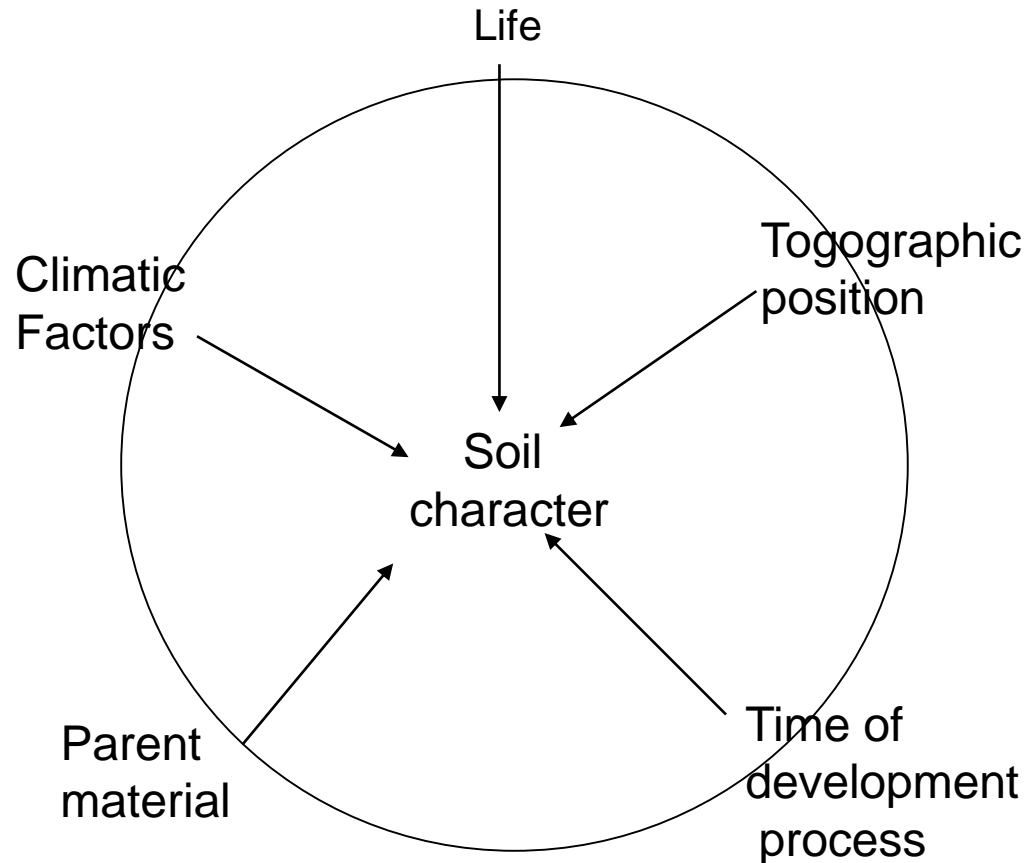
The soil zone map was presented by Professor Joel at the 1927 World Soils Congress in Washington.

Professor Wyatt from the U of Alberta, and Prof Ellis from the U of Manitoba cooperated in preparing the map.

Following the Congress Joel and others hosted a field trip attended by across the Canadian Prairies



Soil character as determined by genetical factors (Joel, 1928)

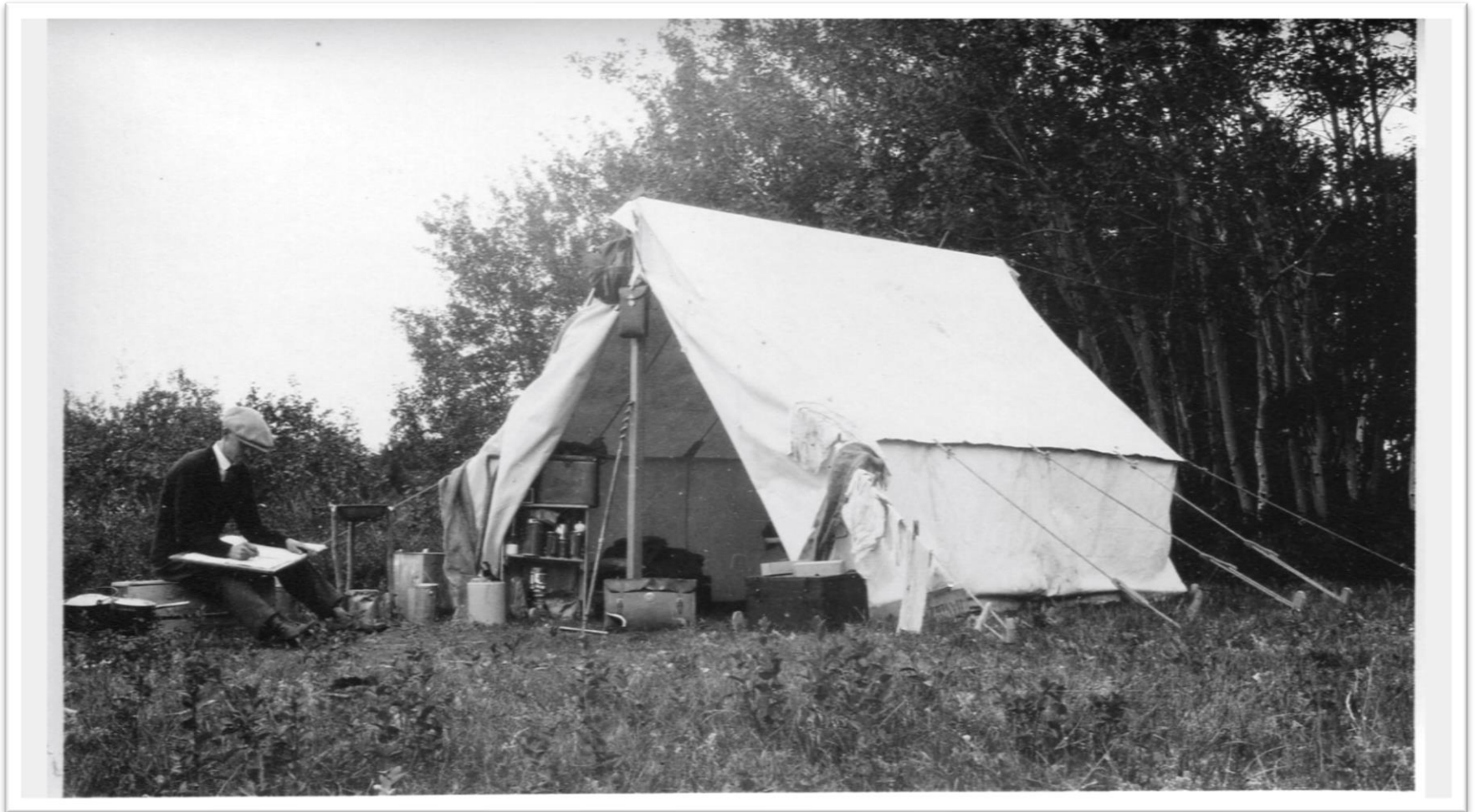


The knowledge gained by the Soil Survey provided local examples for use in teaching, knowledge not available to the first classes offered.



John Mitchell and Harold Moss in 1926. In his talk *Rambles of a Soil Surveyor* (1969) Moss wrote about Mitchell's comment upon finishing the field work for what became the Number 12 map, "*Baldy, in days to come they'll make better and more detailed soil maps than this,-- but they'll have to follow our trails--we were here first.*"

A soil survey camp from the 1920s



Two soil survey giants in the field

- Professor FH Edmunds, a geologist from Liverpool University joined the Soil Survey in 1925.
- Harold Moss wearing the standard issue breeches and high top boots about 1935.



Jack Clayton, Frank Riecken and John Mitchell, lunching in the field in the mid-1930s



Soil Survey report No. 12 was published in 1944, covering most of agricultural Saskatchewan, and bringing together the work that was part of earlier reports. It is an excellent report, a model of excellence for any aspiring pedologist



The Mystery Woman in
the wheat field

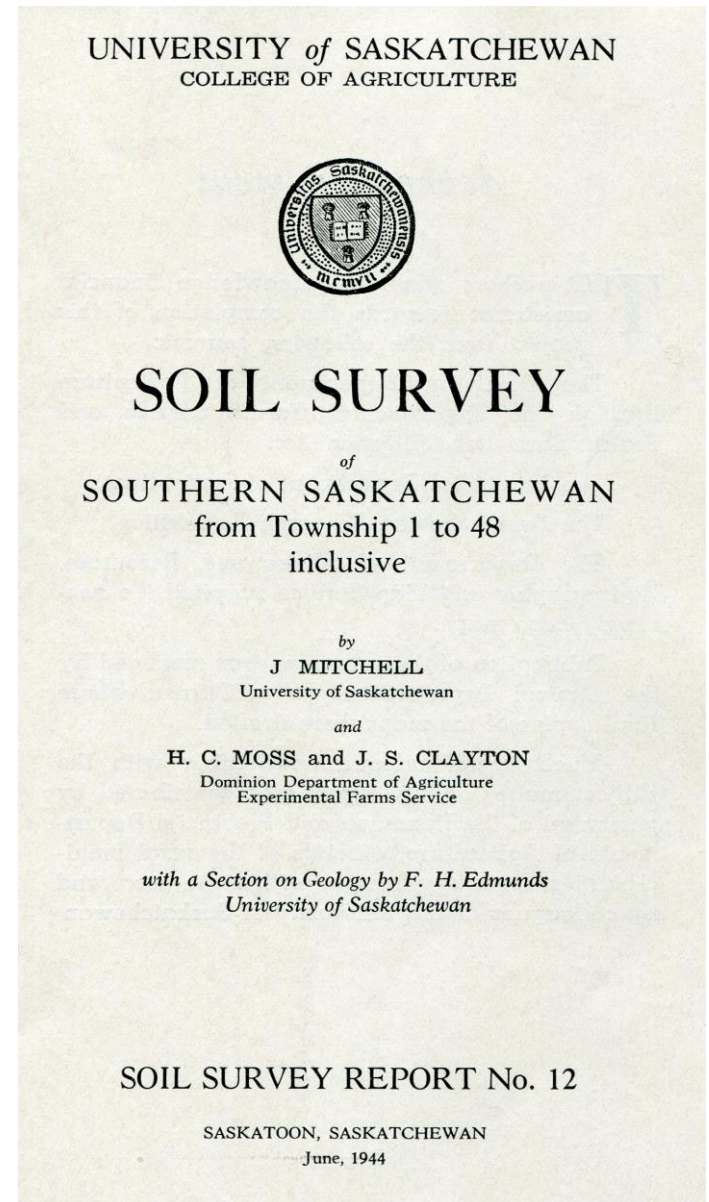
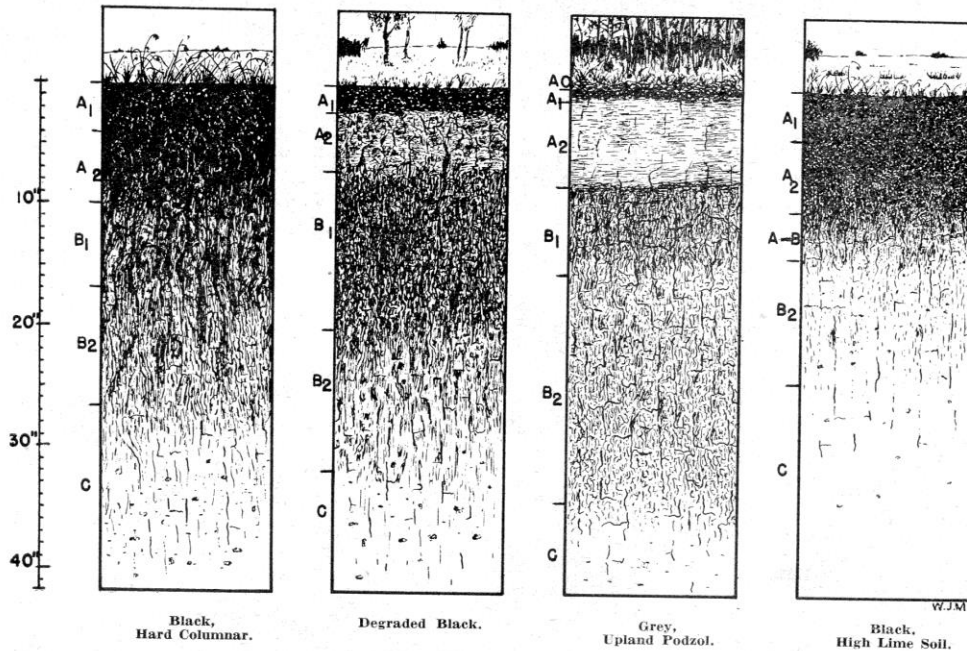


Figure 5

REPRESENTATIVE BLACK, DEGRADED BLACK, AND GREY SOIL GROUP PROFILES



- The Soil Survey developed over time a practical classification for Saskatchewan, based largely on the field classification published by Ellis (1932), with emphasis on soil zone and soil association.
- Association names, mainly through a strong connection to Municipal Assessment, became well-known. Also, the soil zones very important to agronomic recommendations

At the National Soil Survey Committee Meeting at the U of S in 1955 the following decisions were made:

- That the NSSC adopt a taxonomic classification dropping the 'field' classification (Ellis, 1932) of 1945.
- that the scheme be given a thorough trial,
- that sub-committees be established to define more accurately the soil classes at the three higher categorical levels (order, great group and subgroup)
- Also, the sub-committee on horizon nomenclature recommended trial use of a system based on upper case master horizons (A,B, C), and lower case suffixes to further describe the horizon

The Canada Soil Survey Committee met at the U of S in 1973, probably the largest CSSS meeting ever. The printing of the 1st Edition of the System of Soil Classification for Canada followed in 1974



The Basic Survey

- The re-mapping at greater detail of the area covered by Soil Survey reports 12 and 13 began in 1958 in the Regina Map Area
- Proceeded slowly at first and included the survey to evaluate land in the South Saskatchewan Irrigation Project
- A focus on an 'accelerated' survey in the 1980s and 1990s saw the completion of mapping by the late 1990s, with strong Federal and Provincial funding.
- Published in several different formats.
- Goal is a digital soil survey for application using modern technologies
- Easily understood information on new soil associations is required



Soil survey
in the 1960s
to 1990s

Glory days for Soil Survey

1960-2000

- Strong leadership from Don Rennie, Roly St. Arnaud, John Stewart, Jim Ellis, Don Acton, Harold Rostad, Bernard Stonehouse, Glenn Padbury, and many others
- A large and skilled group of soil mappers until the mid-1990s, many still active in related work
- Projects in agricultural Saskatchewan, forest regions, Prince Albert NP, Grasslands NP, Yukon and NT
- Major contributions to the Canada Soil Survey Committee
- Health of our Soils, Don Acton
- Soil Landscapes of Canada
- Ecoregions of Saskatchewan and the Prairies
- Environmental Sustainability of Canadian Agriculture

International Soils Commission VI, 1989, on the Vertisols Of cold regions, began with a work shop in Saskatoon and included a field excursion in Saskatchewan and Montana





The Saskatchewan Centre for Soil Research in 1991
Agriculture Building

Sources

- Jim Ellis, The History of the SIP, 1949-85
- Dr. Harold Moss, History of the Saskatchewan Soil Survey 1921-85, and Rambles of a Soil Surveyor (1969)
- See also: Darwin Anderson and Scott Smith. 2011. A history of soil classification and soil survey in Canada: Personal perspectives. Canadian Journal of Soil Science 91:675-694 (Pedology Special Issue)

Thank you!



The view from the St. Victor Petroglyphs near Assiniboia, a Sacred Site